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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/634,878	08/06/2003	Yasunari Sohda	NIT-385	7545

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EXAMINER

WELLS, NIKITA

ART UNIT PAPER NUMBER

2881

DATE MAILED: 04/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/634,878

Applicant(s)

SOHDA ET AL.

Examiner

Nikita Wells

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2003.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-20 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 08 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 040504.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 16 and 17 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention.

Claim 16 recites the limitation "said electron beams" on line 2, and claim 17 recites the limitation "said multi beams" on lines 2-3. There is insufficient antecedent basis for this limitation in claim 15 which refers only to one electron beam and not multiple electron beams.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claims 1, 5-7, 14, 15, 19, and 20, are rejected under 35 U.S.C. 102(e) as being anticipated by S. Goto (6,452,193 B1).

With respect to the independent claims 1, 14, and 15, S. Goto discloses (Fig. 1; Col. 1, lines 29-35 and 53-60; Col. 2, lines 57-63; Col. 3, lines 47-54; and Col. 5, lines 6-24) an electron beam exposure equipment comprising: an electron gun (1); an electron optics system (5, 6) irradiating an electron beam (3) emitted from said electron gun (1) on a sample (16) via aligners (10) and two electromagnetic lenses (12, 13) for forming one image; wherein the position of an

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electron beam near an image plane is changed by adjusting the excitation (18, 19) of the two electromagnetic lenses (12, 13).

With respect to claims 5-7 and 19-20, S. Goto discloses (Col. 3, lines 59-62) the electron beam exposure equipment, wherein the magnitudes of the rates of change of excitation current of the two electromagnetic lenses (12, 13) are almost equal.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-4, 8-13, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over S. Goto (6,452,193 B1) in view of Nakasuji et al. (6,593,152 B2).

With respect to claims 2, 8, and 11-13, S. Goto discloses (Fig. 1; Col. 1, lines 29-35 and 53-60; Col. 2, lines 57-63; Col. 3, lines 47-54; and Col. 5, lines 6-24) an electron beam exposure equipment comprising: an electron gun (1); an electron optics system (5, 6) and two electromagnetic lenses (12, 13) for forming one image; but fails to disclose that the electron beam exposure equipment utilizes multiple beams and the use of an electron beam detector. However, Nakasuji et al. disclose (Figs. 1 and Col. 2, lines 45-56) the use of multiple electron beams in their exposure apparatus, as well as an elaborate electron beam detector system (Col.3, line 60 to Col. 4, line 8).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize and substitute the multiple electron beam exposure apparatus

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and electron beam detector system of Nakasuji et al. into the electron beam exposure equipment of S. Goto in order to facilitate optical adjustment of the electron optics system using a doublet lens necessary for large field projection.

With respect to claims 3, 4, 9, 10, and 18, S. Goto discloses an electron beam exposure apparatus with the use of an electromagnetic lens doublet (12, 13)(Col. 3, lines 46-67), but fails to disclose that one of the two electromagnetic lenses is under stronger excitation than the other electromagnetic lens. However, the use of different magnitudes of excitation current of the two electromagnetic lenses is a normal way of changing the position of the electron beam on a sample and is well known in prior art.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Emmanuel de Chambost. (4,798,953) discloses an electronic beam device for projecting the image of an object onto a sample with the use of two electromagnetic lenses.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikita Wells whose telephone number is (571) 272-2484. The examiner can normally be reached on 8:30 AM - 5:00 PM. If attempts to reach the examiner by

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telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477. The central fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read "Nikita Wells". The signature is fluid and cursive, with the first name "Nikita" and the last name "Wells" clearly distinguishable.

Nikita Wells

Primary Examiner, Art Unit 2881

April 5, 2004